Ontario Hydro
Lakeview Generating Station
Selected Design Specifications

	Units 1 & 2	Units 3 & 4	Units 5 & 6	Units 7 & 8
Electric Power Output				
Installed Capacity	300,000 kW/unit	300,000 kW/unit	300,000 kW/unit	300,000 kW/unit
Generation Voltage: (volts)	16,000	18,000	18,000	18,000
Transmission Voltage: (volts)	230,000	230,000	230,000	230,000
Steam Generator				
Type:	natural circulation radiant boiler	controlled circulation radiant boiler	natural circulation radiant boiler	natural circulation radiant boiler
Design Pressure (psig)	2,750	2,700	2,750	2,750
Design Steam Output (lb. per hour per unit)	2,000,000	2,000,000	2,000,000	2,000,000
Secondary Superheater Outlet Pressure (psig)	2,450	2,450	2,450	2,450
Secondary Superheater Outlet Temp. (°F)	1,000	1,000	1,000	1,000
Coal Pulverizers (No. per Unit)	6	5	6	6
Coal Burners (No. Per Unit)	24	40	18	18
Water Temperature at Economizer inlet (°F)	465	469	465	465
Air Temp. at Preheater Outlet (°F)	504	524	496	496
Gas Temp. at Air Heater Outlet (°F)	260	245	244	244
Reheat Steam Temp. (°F)	1,000	1,000	1,000	1,000
Reheat Steam Temp. Control	Gas Recirculation fans (two per unit)	Burners tilt up and down	Gas recirculation fan - 1 per unit	Gas recirculation fan - 1 per unit
Furnace Observation at Control Room	Closed circuit TV - 3 cameras	Closed circuit TV - 2 cameras	Closed Circuit TV - 3 cameras	Closed circuit TV - 3 cameras
Water Level Observation at Control Room	Steam drum gauge glass plus two reflecting mirrors	Steam drum gauge glass plus two reflecting mirrors	Steam drum gauge glass plus two reflecting mirrors	Steam drum gauge glass plus two reflecting mirrors
Steam Generator Controls	Pneumatic - supplied by Bailey Meter Co.	Electrical - Hagan Controls	Electrical - Bailey Meter Co.	As 5 & 6
Turbines				
Type	cross-compound, reheat, impulse reaction, single flow HP, 2 double flow IP, 2 dbl. fl.LP	tandem-compound, reheat, impulse reaction, single flow HP, single flow IP, 2 double flow LP	Same as Units 3 & 4	tandem-compound, reheat,impulse reaction, single flow HP, single flow IP, double flow LP
Steam Pressure at Throttle (psig)	2,350	2,350	2,350	2,350
Steam Temp. at Throttle (°F)	1,000	1,000	1,000	1,000
Back Pressure (in Hg Absolute)	1.0	1.0	1.0	1.0
Number of Extraction Points	7	7	7	7
Pounds of Steam per Kilowatt hour Gross	6.36	6.27	6.22	6.31
Turbine Heat Rate at Full Load (BTU per kWh)	7,612	7,613.3	7,627.1	7,546
Shaft Speed (rpm)	3,600/1,800	3,600	3,600	1,800
Generators				
Cooling	Rotors hydrogen cooled at 30 psig normal pressure. Conventionally cooled stator	Rotors hydrogen cooled at 30 psig normal pressure. Stators water cooled	Same as Units 3 & 4	Same as Units 3 & 4
Rating:	two 150 MW generators per unit at 0.85 power factor	one 300 MW generator per unit at 0.85 power factor	Same as Units 3 & 4	Same as Units 3 & 4
Exciters (per Unit)	Two systems. Main exciters separately driven, 1,900 amps at 415 V.D.C. Output	One exciter 3,850 amps at 480 V.D.C. - separately driven	One exciter 3,780 amps at 470 V.D.C. - separately driven	One exciter separately driven 3,200 amps at 375 V.D.C.
Type:	DC generator driven by AC motor	DC generator driven by AC motor	DC generator driven by AC motor	DC generator driven by AC motor

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Boiler Feed Pumps				
Number of 50% pumps in use:	2 (plus one spare) electric motor driven	2 electric motor driven	2 electric motor driven	2 electric motor driven
Discharge Pressure (psig)	2,671	2,578	2,671	2,793
Drive Motors (HP electric)	4,500	4,350	4,350	4,500/5,300
Control	Variable speed hydraulic coupling	Variable speed hydraulic coupling	Variable speed hydraulic coupling	Variable speed hydraulic coupling
Number of 10% pumps in use	0	1 electric motor driven	1 electric motor driven	1 electric motor driven
Discharge Pressure (psig)	-	2,578	2,671	2,671
Drive Motors (HP electric)	-	1,250	1,250	1,250
Control	-	on-off only non-controlled	on-off only non-controlled	on-off only non-controlled
Extraction Heaters				
Low Pressure Heaters	4 per unit	4 per unit	4 per unit	4 per unit
High Pressure Heaters	2 per unit	2 per unit	2 per unit	2 per unit
Deaerator	1 per unit	1 per unit	1 per unit	1 per unit
Condensers				
Number and type per unit	one twin shell, single pass	one twin shell, single pass	one twin shell, single pass	one twin shell single pass
Condenser Surface (sq. feet)	125,000	90,000	90,000	90,000
Circulating Water Through Condenser (lgpm)	156,700	112,500	112,500	114,100
Steam Condensed (lbs. per hour)	1,291,000	1,275,730	1,275,000	1,275,000
Condensate Pumps per Condenser	3, 50%	3, 50%	3, 50%	3, 50%
Capacity Per Pump (lgpm)	1,430	1,460	1,460	1,460
Rating Per Pump (BHP)	300	350	350	350
Electrical Service				
Main Transformers	one at 340,000 kVA per unit	same as Units 1 & 2	same as Units 1 & 2	same as Units 1 & 2
Station Service Transformers (per unit)	2 at 12,500 kVA	1 at 25,000 kVA	1 at 25,000 kVA	1 at 25,000 kVA
Reserve Station Service Transformers	1 at 25,000 kVA for 2 units	1 at 25,000 kVA for 2 units	1 at 25,000 kVA for 2 units	1 at 25,000 kVA for 2 units
Voltage for motors 200 HP and above	4,000	4,000	4,000	4,000
Voltage for motors below 200 HP including fractional	550	550	550	550
Coal Handling:	Common System for whole station. Coal received from self-unloading lakers			
Capacity of unloading conveyors:	One at 3,000 tons per hour One two-speed at 1,000 or 2,000 tons per hour Combined maximum 5,000 tons per hour			
Storage Pile	2,500,000 tons			
Stockpile Reclaim:	Accomplished by 5 grade level hoppers and 2 runover hoppers			
Dust and Ash Collection:				
Bottom Ash Collected Daily: (wet tons per unit)	37.5	40.8	39	39
Capacity of Bottom Ash Conveyor Systems: (dry tons of ash per hour)	40	60	60	60
Capacity of Dewatering Bins:	1 common 250 dry ton	2 alternating 250 dry ton	1 common 250 dry ton	1 common 250 dry ton
Fly Ash Handled:	Dry to silo	Dry to silo	Dry to silo	Dry to silo
Fly Ash Conveyed: (Tons/hour/unit) (at 100% Load)	8.6	10.1	9.8	9.8
Capacity of Silos	one 2,000 ton silo for 2 units	one 2,000 ton silo for 2 units	one 2,000 ton silo for 2 units	One 2,000 ton silo for 2 units
Fly Ash Collected (tons/unit/day)	207	242	235	235
Stacks:	One stack for 2 units - total of four stacks. Each stack 493 feet above base. Constructed of reinforced concrete with self-supporting brick lining.			